

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application: following is a listing of all the claims as they currently stand.

LISTING OF CLAIMS:

1 1. (Currently Amended) A method for inducing an antigen specific systemic
2 and rectal mucosal cytotoxic T lymphocyte (CTL) response in a mammalian subject comprising
3 contacting a rectal mucosal tissue of the subject with a composition comprising a chimeric
4 peptide ~~containing a first subregion with multiple overlapping helper T cell activating epitopes of~~
5 ~~a HIV isolate that can be presented by multiple MHC class II molecules and a second subregion~~
6 ~~with a CTL activating epitope of the HIV isolate, wherein the contacting induces a systemic and~~
7 ~~rectal mucosal cytotoxic T lymphocyte response that can reduce the proliferation of a virus~~
8 ~~expressing the CTL activating epitope of the HIV isolate~~ having the amino acid sequence
9 KQIINMWQEVGKAMYAPPISGOIRRIQRGPGRAFTIGK (SEQ ID NO: 2).

2. (Cancelled)

1 3. (Original) The method of claim 1, wherein said composition further
2 comprises an adjuvant.

1 4. (Original) The method of claim 3, wherein the adjuvant is selected from
2 cholera toxin (CT), mutant cholera toxin (MCT), or mutant- E. coli heat labile enterotoxin
3 (MLT).

1 5. (Original) The method of claim 1, further comprising administering a
2 purified cytokine to the subject.

1 6. (Previously Presented) The method of claim 5, wherein the cytokine is
2 contacted with the rectal mucosal surface.

1 7. (Original) The method of claim 5, wherein the purified cytokine is
2 selected from granulocyte-macrophage colony-stimulating factor (GM-CSF), interleukin-2 (IL-
3 2), interleukin-7 (IL-7), interleukin-12 (IL-12) or tumor necrosis factor α (TNF α).

1 8. (Original) The method of claim 1, further comprising administering
2 purified interferon- γ to the subject.

1 9. (Previously Presented) The method of claim 8, wherein the purified
2 interferon- γ is contacted with the rectal mucosal surface of the subject.

1 10. (Original) The method of claim 5, further comprising administering
2 purified interferon- γ to the subject.

1 11. (Previously Presented) The method of claim 10, wherein the purified
2 interferon- γ is contacted with the rectal mucosal surface of the subject.

1 12. (Original) The method of claim 1, wherein said composition further
2 comprises a purified cytokine selected from granulocyte-macrophage colony-stimulating factor
3 (GM-CSF), interleukin-2 (IL-2), interleukin-7 (IL-7), interleukin-12 (IL-12) or tumor necrosis
4 factor.

1 13. (Original) The method of claim 1, wherein said composition further
2 comprises purified interferon- γ .

 14. (Original) The method of claim 12, wherein said composition further
comprises purified interferon- γ .

15.-24. (Cancelled)

1 25. (Currently Amended) A method for inducing an antigen specific systemic
2 and rectal mucosal CTL response in a mammalian subject, comprising contacting a rectal

3 mucosal tissue of the subject with a composition comprising a chimeric peptide having the amino
4 acid sequence KQIINMWQEVGKAMYAPPISGQIRRIQRPGR AFVTIGK (SEQ ID NO:
5 2)containing a first subregion with multiple overlapping helper T cell activating epitopes of a
6 HIV isolate that can be presented by multiple MHC class II molecules, and a second subregion
7 with a CTL activating epitope of the HIV isolate, wherein said composition does not comprise an
8 adjuvant, and wherein the contacting induces the production of systemic and rectal mucosal
9 cytotoxic T lymphocyte response that can reduce the proliferation of a virus expressing the CTL
10 activating epitope of the HIV isolate.

1 26. (Original) The method of claim 25, further comprising administering a
2 purified cytokine the subject.

1 27. (Previously Presented) The method of claim 26, wherein the cytokine is
2 contacted with the rectal mucosal surface of the subject.

1 28. (Previously Presented) The method of claim 27, wherein the purified
2 cytokine is selected from granulocyte-macrophage colony-stimulating factor (GM-CSF,
3 interleukin-2 (IL-2), interleukin-7 (IL-7), interleukin-12 (IL-12) or tumor necrosis factor a
4 (TNFa).

1 29. (Previously Presented) The method of claim 25, further comprising
2 administering purified interferon- γ to the subject.

1 30. (Previously Presented) The method of claim 29, wherein the purified
2 interferon- γ is contacted with a mucosal surface of the subject.

1 31. (Previously Presented) The method of claim 26, further comprising
2 administering purified interferon- γ to the subject.

1 32. (Previously Presented) The method of claim 31, wherein the purified
2 interferon- γ is contacted with a mucosal surface of the subject.

1 33. (Previously Presented) The method of claim 25, wherein said composition
2 further comprises a purified cytokine selected from granulocyte-macrophage colony-stimulating
3 factor (GM-CSF), interleukin-2 (IL-2), interleukin-7 (IL-7), interleukin-12 (IL-12) or tumor
4 necrosis factor.

1 34. (Previously Presented) The method of claim 25, wherein said composition
2 further comprises purified interferon- γ .

 35. (Previously Presented) The method of claim 33, wherein said composition
further comprises purified interferon- γ .

36.-45. (Cancelled)

1 46. (Currently Amended) An immunogenic composition comprising a
2 chimeric peptide containing a first subregion with multiple over-lapping helper T cell activating
3 epitopes of a HIV-1 isolate that can be presented by multiple MHC class II molecules and a
4 second subregion with a CTL activating epitope of the HIV-1 having the amino acid sequence
5 KQIINMWQEVGKAMYAPPISGQIRRIQRGPGRAFTIGK (SEQ ID NO: 2), formulated for
6 intrarectal delivery to the rectum, colon, sigmoid colon, or distal colon ~~that induces an antigen~~
7 ~~specific systemic and rectal mucosal cytotoxic T lymphocyte response that can reduce the~~
8 ~~proliferation of a virus expressing the CTL activating epitope of the HIV isolate; wherein said~~
9 composition is formulated as a rectal emulsion, foam, suppository, or gel preparation and
10 comprises a base, carrier, or absorption-promoting agent adapted for intrarectal delivery.

47.-49. (Cancelled)

1 50. (Currently Amended) The immunogenic composition of claim 48 ~~46~~,
2 wherein the chimeric peptide is admixed with a rectally-compatible homogeneous gel carrier.

1 51. (Previously Presented) The immunogenic composition of claim 50,
2 wherein the homogenous gel carrier is a polyoxyethylene gel.

52.-53. (Cancelled)

1 54. (Currently Amended) The immunogenic composition of claim ~~53~~ 46,
2 wherein the suppository is comprised of a base selected from a polyethyleneglycol, witepsol
3 H15, witepsol W35, witepsol E85, propyleneglycol dicaprylate (Sefsol 228), Miglyol 810,
4 hydroxypropylcellulose-H (HPC), or carbopol-934P (CP).

1 55. (Previously Presented) The immunogenic composition of claim 54,
2 comprising at least two base materials.

1 56. (Previously Presented) The immunogenic composition of claim 46,
2 further comprising a stabilizing agent to minimize intrarectal degradation of the chimeric
3 peptide.

57. (Cancelled)

1 58. (Currently Amended) The immunogenic composition of claim ~~57~~ 46,
2 wherein the absorption-promoting agent is selected from a surfactant, mixed micelle, enamines,
3 nitric oxide donor, sodium salicylate, glycerol ester of acetoacetic acid, cyclodextrin or beta-
4 cyclodextrin derivative, or medium-chain fatty acid.

1 59. (Original) The immunogenic composition of claim 46, further comprising
2 an adjuvant.

60. (Original) The immunogenic composition of claim 59, wherein the
adjuvant is selected from cholera toxin (CT), mutant cholera toxin (MCT), mutant- E. coli heat
labile enterotoxin, or pertussis toxin.

1 61. (Original) The immunogenic composition of claim 59, wherein the
2 adjuvant is conjugated to a mucosal tissue or T cell binding agent.

1 62. (Original) The immunogenic composition of claim 61, wherein the
2 mucosal tissue or T cell binding agent is selected from protein A, an antibody that binds a
3 mucosal tissue- or T-cell-specific protein, or a ligand or peptide that binds a mucosal tissue- or
4 T-cell-specific protein.

1 63. (Currently Amended) The immunogenic composition of claim 59,
2 wherein the adjuvant comprises a recombinant cholera toxin (CT) having a B chain of CT
3 substituted by protein A conjugated to a CT A chain ~~to eliminate toxicity and enhance mucosal~~
4 ~~tissue binding mediated by protein A.~~

1 64. (Original) The immunogenic composition of claim 59, wherein the
2 adjuvant is conjugated to a protein or peptide that binds specifically to T cells.

65. (Cancelled)

66. (Canceled)

1 67. (Original) The immunogenic composition of claim 59, further comprising
2 purified IL-12.

1 68. (Original) The immunogenic composition of claim 59, further comprising
2 purified interferon- γ .

1 69. (Original) The immunogenic composition of claim 68, further comprising
2 purified IL-12.

70. (Cancelled)